

the research worker is, as to the technical aspects of his work, virtually independent of the organization structure.

Generally speaking, it is the consensus of opinion in the professional and scientific group that the road of advancement open to the independent worker—the specialist in pure research—should be as long as that which is provided for the worker in applied science or for the official charged with the responsibility for administrative or operating activities. Although there may be differences of judgment as to what in individual research work constitutes a parity with a certain set of administrative responsibilities, and therefore differences of judgment as to how far the idea should be applied, no one can quarrel very much with the spirit of the principle itself.

The Classification Act and its amendments have recognized this principle almost in full measure, even though legislation has not yet been amended to the point of recognizing that individual research workers in any one of the more outstanding bureaus of the Government may be allocated to the same grade as the head of that bureau. It may thus be said that except as to the highest grade to which the Board is authorized to allocate positions, i.e., P-8, the assumption of administrative responsibility is not a prerequisite for any grade. I think it will be agreed that this relationship in the Government Service between the allocation of individual research positions and the allocation of administrative positions is certainly as favorable to the individual research worker as is the corresponding relation in the large corporations of private industry between the salaries of its scientists and those of its highest executives.

PALEOBOTANY.—*A new Palm from the upper Eocene of Ecuador.*¹

EDWARD W. BERRY, Johns Hopkins University.

The specimen which it is the purpose of the present note to describe was sent to me by Dr. George Sheppard of Guayaquil, Ecuador, and was collected from the upper Eocene of the Ancon district, Santa Elena peninsula, Ecuador. It is splendidly preserved as a calcification, and is undoubtedly a new species of palm fruit, and appears to belong in the genus *Astrocaryum* Meyer. It may be described as follows:

Astrocaryum sheppardi n. sp. Berry

Fig. 1.

Nut fairly large for this genus, elongated, slightly asymmetric, pointed at both ends—less sharply so proximad. Length 7.5 centimeters. Maximum

¹ Received April 12, 1932.

diameter 3.93 centimeters. Minimum diameter 3.65 centimeters. This slight departure from a circular cross section may be natural or it may be due to a slight amount of deformation during fossilization. Germinating pores three in number, round, about 6.25 millimeters in diameter, situated unusually high above the base—the distance ranging from 3.1 to 3.4 centimeters, slightly higher on the more inflated side of the fruit. The contours are rather more straight below the pores and more inflated and rounded above them. The surface is corrugated by irregular disconnected (interrupted) longitudinal ribbing, which is more pronounced proximad.

The identification of palm fruits, either fossil or recent is about as baffling as is the identification of palm wood, not because the fruits are not character-

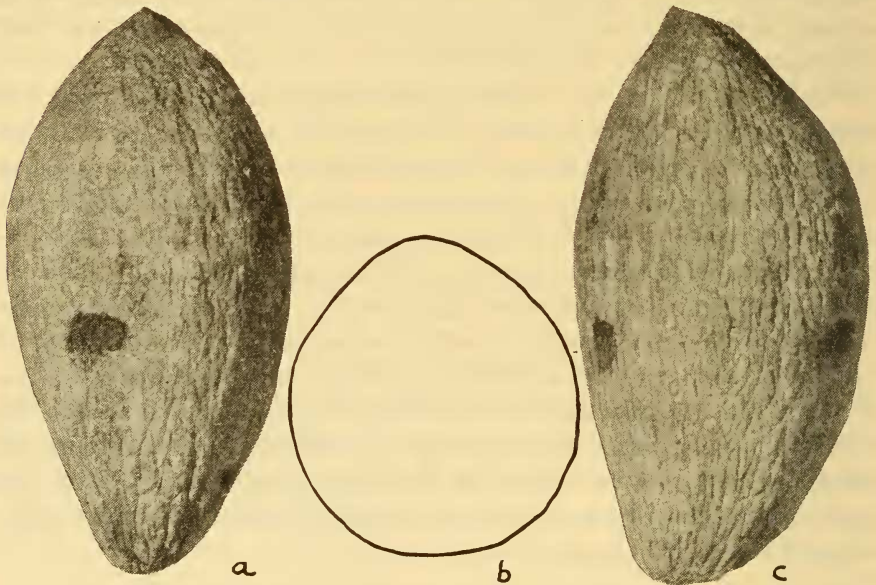


Figure 1.—(a) *Astrocaryum sheppardi* from the inflated side.—(b) Equatorial profile.—(c) View of side showing two of the germinating pores.

istic, but because specimens of the fruits of recent species are not available in collections nor are they particularly well described by systematic botanists even when known and often they remain unknown. Ordinarily paleobotanists evade this difficulty by referring fossil palm fruits to the purely form genus *Palmocarpus*, proposed by Lesquereux in 1878, and now containing upwards of thirty nominal species from different parts of the world. About half of these are from the Eocene of the United States. Others come from Panama, the Antilles, Ecuador, and Peru. They obviously have slight systematic value unless they show definite resemblances to existing genera.

The genus *Astrocaryum*, to which the present species from Ecuador is referred, includes stemless to tall feather palms and contains about thirty existing species. These are exclusively American and range from southern Mexico to eastern Peru, reaching their maximum development in the rain

forests of the Amazon basin, although they are also found in the Brazilian Campos. They are not especially coastal types but their fruits are common in the beach drift of both coasts of tropical America, occurring on the beaches of the Pacific coast as far south as Punta Parinas, and here derived in all probability from the Guayas estuary by the action of small inshore counter currents, although it is conceivable that they might occasionally be brought down to the sea from the head waters of the Tumbes or Chira Rivers. However, their occurrence along the north Peruvian desert coast associated with unfilled and hence floatable nuts of the Ivory palm would indicate that the former origin was the more likely.

No other fossil species of *Astrocaryum* are known to me. A few years ago I described specimens of fruits from the Oligocene of Peru which I referred to that genus,² but subsequent collections proved them to belong to the related genus *Attalea* H. B. K.,³ which has about as many existing species and a somewhat similar geographical distribution. The fruits of the latter, however lack germinating pores and hence can be readily discriminated from the fruits of *Astrocaryum* when the material is well preserved.

The geological section on the Santa Elena peninsula of western Ecuador is much like that so thoroughly described by Olsson and Iddings in the northwestern coastal region of Peru, and the older Tertiary of the two regions has already yielded a number of identical fossil fruits. This number is likely to be much increased by more detailed collecting in the Ecuadorian region.

² Berry, E. W., U. S. Nat. Museum Proc. 70: Art. 3. 1926.

³ Berry, E. W., Pan Amer. Geologist, 51: 242, figs. 4-10. 1929.

ENTOMOLOGY.—*Four new North American species of Bassus Fabricius (Hymenoptera, Braconidae), with notes on the genotype.*¹
C. F. W. MUESEBECK, Bureau of Entomology. (Communicated by HAROLD MORRISON.)

In my treatment of the Nearctic Braconinae² I briefly summarized the situation concerning the status of the names *Bassus* Fabr. and *Microdus* Nees. The two being isogenotypic and *Bassus* the older name, *Microdus* must be suppressed. The continued European usage of *Microdus* for this group in the Braconidae and of *Bassus* for an ichneumonid genus evidently is due to a disregard of first genotype fixation, and to the acceptance of Westwood's designation (1840)³ of *Bassus laetatorius* Fabr. as type of *Bassus*, no notice being taken of the designation of *Ichneumon calculator* Fabr. by Curtis⁴ in 1825.

¹ Received April 26, 1932.

² Proc. U. S. Nat. Mus. 69: Art. 16, 1927, 73 pp.

³ Intr. Mod. Class. Ins. 2: 59. Gen. Syn. 1840.

⁴ Brit. Ent. 2: 73. 1825.

BASSUS CALCULATOR Fabricius

Ichneumon calculator Fabricius, Suppl. Entom. System., 1798, p. 225.

Bassus calculator Fabricius, Syst. Piez., 1804, p. 98.

Since this species was only very briefly characterized by Fabricius, and since subsequent descriptions by other authors apparently have been based merely on material identified as *calculator* and not on the type, which is in the Natural History Museum at Kiel, Germany, the following notes taken from the type specimen are included here:

A female specimen labeled "21 calculator." Agrees with the characterization of *Bassus* in my paper on the Braconinae to which reference has already been made.

Length, about 6 mm. Face not rostriform, broad, smooth; antennae missing; temples narrow, receding; frons immargined; ocelli small; mesoscutum polished; notauli sharply impressed; scutellar furrow rather broad, with several foveae within; scutellum smooth; propodeum convex, closely rugulose; mesopleural furrow curved, foveolate; metapleura mostly smooth; areolet (second cubital cell) triangular, sessile; nervulus very slightly postfurcal; mediella a little shorter than lower abscissa of basella; subdiscoidella not distinct; abdomen scarcely as long as head and thorax combined; first tergite broadening gradually behind, longer than broad, shallowly but distinctly striate, without prominent longitudinal keels; a little faint longitudinal sculpture at base of second; remainder of dorsum of abdomen smooth and shining; ovipositor sheaths very nearly as long as body. Head black; thorax black, with pronotum, mesoscutum, scutellum, and mesopleura anteriorly, red; abdomen black; anterior and middle legs yellowish, their coxae piceous; posterior legs blackish, base of tibia yellow; wings weakly infumated, with a hyaline area across discocubital cell and extending into second discoidal.

Bassus petiolatus, new species

Closely resembling *californicus* Mues., but distinguishable by the more rostriform face, weakly sculptured propodeum, mostly reddish or reddish yellow abdomen, and more slender legs.

Female.—Length, 5 mm. Head strongly produced below; malar space nearly as long as eye and nearly vertical; clypeus long, less than one and one-half times as broad as long; a low ridge on frons between antennae and below median ocellus; temples narrow; ocell-ocular line not quite twice diameter of a lateral ocellus and shorter than postocellar line; labial palpus very slender, third segment nearly half as long as second; antennae 32-segmented, a little shorter than the body.

Thorax with notauli sharply impressed, finely punctate; mesonotal lobes and scutellum smooth; scutellar furrow foveate; propodeum strongly convex, without carinae, punctate, nearly smooth medially; sides of pronotum, and mesopleura, polished; mesopleural furrow long, nearly complete, finely foveolate; metapleurum punctate; radial cell on wing margin only about one-third as long as stigma; areolet minute, long-petiolate; mediella about equal to lower abscissa of basella; posterior tibia unusually slender on basal half, scarcely thicker at middle than at base, but distinctly enlarged apically; longer calcarium of posterior tibia hardly more than one-third as long as metatarsus.

Abdomen narrower than thorax; first tergite more than one and one-half times as long as broad at apex, without longitudinal keels, and smooth and

shining except for a little faint reticulation medially; remainder of abdomen polished, second tergite longer than third and with a very weakly indicated curved transverse impression at middle; ovipositor sheaths slightly longer than body.

Head and thorax black; abdomen reddish yellow, with first tergite more or less blackish; wings uniformly infumated; legs mostly yellowish; coxae black or blackish; posterior tibia mostly infuscated, with a pale yellow streak on inner side just before middle; middle and hind tarsi blackish.

Male.—Essentially like the female; antennae of allotype also 32-segmented; posterior coxae red.

Type-locality.—Alamogordo, New Mexico.

Type, allotype, and 10 paratypes in Academy of Natural Sciences of Philadelphia, 11 paratypes in U. S. Nat. Museum (No. 44081, U. S. N. M.).

Eight females and fifteen males collected in April and May, 1902. The paratypes exhibit some color variation, pronotum and mesonotum sometimes becoming more or less testaceous, abdomen occasionally dark reddish rather than reddish yellow, and, rarely, all coxae brownish yellow.

Bassus parvus, new species

Most similar to *annulipes* (Cress.), but differing especially in the black coxae, the lack of longitudinal carinae on propodeum, shorter antennae, strongly oblique areolet of anterior wing, more compact abdomen, and smaller size.

Female.—Length, 2.4 mm. Head, as seen from in front, very short and broad, malar space short and very strongly inclined inwardly; eyes large; face much broader than long; third segment of labial palpus minute, scarcely discernible; antennae about as long as body, 25-segmented; temples swollen opposite middle of eyes; entire head polished.

Thorax a little narrower than head; mesonotum smooth and shining; notauli weakly impressed, punctate posteriorly, scarcely distinct anteriorly; propodeum punctate-rugulose without distinct carinae; mesopleurum polished, its furrow straight, indistinctly punctate; metapleurum shining, rugulose behind; posterior coxae polished; areolet of anterior wing minute, strongly petiolate, and oblique; second intercubitus very weak; mediella distinctly longer than lower abscissa of basella.

Abdomen about as wide as thorax and scarcely longer; first tergite a little longer than broad, closely longitudinally striate, without distinct keels; remainder of abdomen polished; second tergite with a shallow transverse curved impressed line near middle; ovipositor sheaths slender, about one and one-half times as long as abdomen.

Black; palpi piceous; all coxae black; all trochanters and femora brownish black; anterior and middle tibiae brownish; hind tibia blackish on apical half, yellowish basally, with an incomplete dark annulus a little beyond base; wings hyaline; stigma and veins dark brown.

Male.—Like the female in essential characters; antennae likewise 25-segmented.

Type-locality.—Palo Alto, California.

Type.—No. 44082, U. S. N. M.

Three females and one male reared in the Bureau of Entomology by J. M. Miller (*Hopkins* 18244c), from an undetermined host infesting *Cupressus macrocarpa*.